

Amendments to the Claims

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Amended) A braking system comprising:
a power-operated hydraulic pressure source operable to deliver a pressurized working fluid;
a brake including a hydraulically operated brake cylinder;
a manually operable brake operating member;
a master cylinder disposed between said power-operated hydraulic pressure source and said brake cylinder and operable to deliver the pressurized working fluid into said brake cylinder, in response to an operation of said manually operable brake operating member; and
a flow-rate changing device disposed between said power-operated hydraulic pressure source and said brake cylinder and including said master cylinder, said flow-rate changing device being operable to change a rate of flow of the pressurized working fluid from said master cylinder into said brake cylinder, which rate corresponds to a given rate at which the pressurized working fluid is delivered into said master cylinder as a result of an operation of said power-operated hydraulic pressure source.
2. (Currently Amended) A braking system ~~according to claim 1, comprising:~~
a power-operated hydraulic pressure source operable to deliver a pressurized working fluid:
a brake including a hydraulically operated brake cylinder;
a manually operable brake operating member;

a master cylinder disposed between said power-operated hydraulic pressure source and said brake cylinder and operable to deliver the pressurized working fluid into said brake cylinder in response to an operation of said manually operable brake operating member; and

a flow-rate changing device disposed between said power-operated hydraulic pressure source and said brake cylinder and including said master cylinder, said flow-rate changing device being operable to change a rate of flow of the pressurized working fluid from said master cylinder into said brake cylinder, which rate corresponds to a given rate at which the pressurized working fluid is delivered into said master cylinder as a result of an operation of said power-operated hydraulic pressure source;

wherein said master cylinder includes (a) a housing, and (b) a pressurizing piston fluid-tightly and slidably fitted in said housing, said pressurizing piston having two pressure-receiving surface areas which are different from each other and which respectively partially define a front pressurizing chamber and a rear pressure chamber on front and rear sides of said pressurizing piston, said master cylinder being operable to supply said brake cylinder with the pressurized working fluid delivered from said front pressurizing chamber as said pressurizing piston is advanced,

and wherein said flow-rate changing device includes a switching device having a first state in which the pressurized working fluid is delivered from said power-operated hydraulic pressure source to one of said front pressurizing chamber and said rear pressure chamber which has a smaller one of said two pressure-receiving surface areas, and a second state in which the pressurized working fluid is delivered from said power-operated hydraulic pressure source to the other of said front pressurizing chamber and said rear pressure chamber.

3. (Previously Amended) A braking system according to claim 2, wherein said flow-rate changing device further includes a discharge-flow inhibiting device operable to

inhibit a discharge flow of the pressurized working fluid from said rear pressure chamber while the pressurized working fluid is delivered from said power-operated hydraulic pressure source to said front pressurizing chamber under the control of said switching device.

4. (Previously Amended) A braking system comprising:

a power-operated hydraulic pressure source operable to deliver a pressurized working fluid;

a brake including a hydraulically operated brake cylinder;

a hydraulic cylinder disposed between said power-operated hydraulic pressure source and said brake cylinder, said hydraulic cylinder including (a) a housing, and (b) a pressurizing piston fluid-tightly and slidably fitted in said housing, said pressurizing piston having two pressure-receiving surface areas which are different from each other and which respectively partially define a front pressurizing chamber and a rear pressure chamber on front and rear sides of said pressurizing piston, said hydraulic cylinder being operable to supply said brake cylinder with the pressurized working fluid from said front pressurizing chamber as said pressurizing piston is advanced;

a flow-rate changing device disposed between said power-operated hydraulic pressure source and said brake cylinder and operable to change a rate of flow of the pressurized working fluid into said brake cylinder, which rate corresponds to a given rate at which the pressurized working fluid is delivered from said power-operated hydraulic pressure source,

said flow-rate changing device including a switching device having a first state in which the pressurized working fluid is delivered from said power-operated hydraulic pressure source to one of said front pressurizing chamber and said rear pressure chamber which has a smaller one of said two pressure-receiving surface areas, and a second state in

which the pressurized working fluid is delivered from said power-operated hydraulic pressure source to the other of said front pressurizing chamber and said rear pressure chamber,

said flow-rate changing device further including a discharge-flow inhibiting device operable to inhibit a discharge flow of the pressurized working fluid from said rear pressure chamber while the pressurized working fluid is delivered from said power-operated hydraulic pressure source to said front pressurizing chamber under the control of said switching device; and

a check valve disposed in parallel connection with said discharge-flow inhibiting device, said check valve permitting a flow of the pressurized working fluid in a first direction from said power-operated hydraulic pressure source toward said rear pressure chamber, and inhibiting a flow of the pressurized working fluid in a second direction opposite to said first direction.

5. (Withdrawn) A braking system according to claim 1, wherein said master cylinder includes (a) a housing, (b) a first pressurizing piston fluid-tightly and slidably fitted in said housing and operatively connected to said brake operating member, said first pressurizing piston partially defining a rear pressure chamber on a rear side thereof, and (c) a second pressurizing piston separate from said first pressurizing piston and partially defining a front pressurizing chamber on a front side thereof, said second pressurizing piston cooperating with said first pressurizing piston to partially define an intermediate fluid chamber therebetween, said master cylinder being operable to supply said brake cylinder with the pressurized working fluid delivered from said front pressurizing chamber as said second pressurizing piston is advanced,

and wherein said flow-rate changing device includes a switching device having a first state in which the pressurized working fluid is delivered from said power-operated hydraulic pressure source to said rear pressure chamber, and a second state in which

the pressurized working fluid is delivered from said power-operated hydraulic pressure source to said intermediate fluid chamber.

6. (Previously Amended) A braking system according to claim 2, wherein said switching device includes a communication control valve device operable for selective fluid communication of said power-operated hydraulic pressure source with one of at least two fluid chambers of said master cylinder, said at least two fluid chambers including said front pressurizing chamber and said rear pressure chamber.

7. (Previously Amended) A braking system according to claim 2, further comprising a pressure control device operable to control a pressure of the pressurized fluid in at least one of at least two fluid chambers of said master cylinder, on the basis of an operation-related amount representative of an operating state of said manually operable brake operating member, said at least two fluid chambers including said front pressurizing chamber and said rear pressure chamber.

8. (Withdrawn) A braking system according to claim 1, further comprising a low-pressure source for storing the working fluid at a pressure substantially equal to an atmospheric level,

wherein said master cylinder includes (a) a housing, (b) a stepped pressurizing piston fluid-tightly and slidably fitted in said housing and including a small-diameter portion partially defining a front pressurizing chamber on a front side thereof, and a large-diameter portion having a larger diameter than said small-diameter portion and partially defining a rear pressure chamber on a rear side thereof, said large-diameter portion cooperating with an outer circumferential surface of said small-diameter portion to partially define an annular fluid chamber, said hydraulic cylinder being operable to supply said brake cylinder with the pressurized fluid delivered from said front pressurizing chamber as said pressurizing piston is advanced,

and wherein said flow-rate changing device includes a communicating valve device operable while the pressurized fluid is delivered from said power-operated hydraulic pressure source to said rear pressure chamber, said communicating valve device having a first state for permitting a supply flow of the pressurized fluid from said annular fluid chamber to said brake cylinder, and a second state for permitting a discharge flow of the pressurized fluid from said annular fluid chamber to said low-pressure source, said communicating valve device being switched from said first state to said second state while said pressurizing piston is advanced.

9. (Withdrawn) A braking system according to claim 1, wherein said master cylinder includes (a) a housing, and (b) a pressuring piston fluid-tightly and slidably fitted in said housing and partially defining a front pressurizing chamber on a front side thereof, said pressurizing piston being advanced by the operation of said manually operable brake operating member, said master cylinder being operable to supply said brake cylinder with the pressurized working fluid delivered from said front pressurizing chamber as said pressurizing piston is advanced, said braking system further comprising:

a hydraulic booster operable to apply an assisting force based on a pressure of the pressurized working fluid received from said power-operated hydraulic pressure source; and

an assisting cylinder including a pressurizing piston which partially defines a pressurizing chamber on a front side thereof and which is advanced by the pressurized working fluid received from said power-operated hydraulic pressure source, said assisting cylinder being operable to supply said brake cylinder with the pressurized working fluid delivered from said pressurizing chamber thereof as said pressurizing piston thereof is advanced,

and wherein said flow-rate changing device includes a switching device having a first state in which the pressurized working fluid is delivered from said power-operated hydraulic pressure source to said hydraulic booster, and a second state in which the pressurized working fluid is delivered from said power-operated hydraulic pressure source to said assisting cylinder.

10. (Previously Amended) A braking system according to claim 1, wherein said flow-rate changing device is operable to change said rate of flow of the pressurized working fluid into said brake cylinder, on the basis of a pressure of the pressurized working fluid in said brake cylinder.

11. (Previously Amended) A braking system according to claim 1, wherein said flow-rate changing device is operable to change said rate of flow of the pressurized working fluid into said brake cylinder, on the basis of a rate of increase of a pressure of the pressurized working fluid in said brake cylinder.

12. (Withdrawn) A braking system according to claim 1, wherein said flow-rate changing device is operable to change said rate of flow of the pressurized working fluid into said brake cylinder, when a pressure of the fluid in said brake cylinder has reached a predetermined value which is determined on the basis of an operating state of said power-operated hydraulic pressure source .

13. (Withdrawn) A braking system according to claim 1, wherein said power-operated hydraulic pressure source includes a pump device comprising (a) an electric motor operable with an electric energy, and (b) a pump driven by said electric motor to deliver the pressurized working fluid,

and wherein said flow-rate changing device is operable to change said rate of flow of the pressurized working fluid into said brake cylinder when a pressure of the fluid in said brake cylinder has reached a predetermined value which is determined on the basis of an

amount of electric energy applied to said electric motor.

14. (Withdrawn) A braking system according to claim 1, wherein said flow-rate changing device is operable to change said rate of flow of the pressurized working fluid into said brake cylinder when a pressure of the fluid in said brake cylinder has reached a predetermined value which is determined on the basis of a temperature of said working fluid.

15. (Previously Amended) A braking system according to claim 1, wherein said flow-rate changing device is operable to change said rate of flow of the pressurized working fluid into said brake cylinder on the basis of an operation-related amount of said manually operable brake operating member.

16. (Original) A braking system according to claim 1, wherein said flow-rate changing device is operable to change said rate of flow of the pressurized working fluid into said brake cylinder on the basis of a pressure of the pressurized working fluid delivered from said power-operated hydraulic pressure source.

17. (Previously Amended) A braking system according to claim 2, wherein said flow-rate changing device is operable to change said rate of flow of the pressurized working fluid into said brake cylinder on the basis of a pressure of the pressurized working fluid in said front pressurizing chamber of said master cylinder.

18.- 29. (Canceled)

Amendments to the Drawing

The attached sheet of drawings includes changes to Fig. 5. The attached sheet, including Figs. 4 and 5, replace the original sheet including Figs. 4 and 5.

Attachment: Replacement Sheet